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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,657	10/19/2001	Raymond Zeng	10559-524001/P12428	9805

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EXAMINER

CUNNINGHAM, TERRY D

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 10/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,657

Applicant(s)

ZENG ET AL.

Examiner

Terry D. Cunningham

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 21-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 May 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-20, drawn to a charge pump circuit and method therefor, classified in class 327, subclass 534.
- II. Claims 21-25, drawn to a method or providing a signal to an EEPROM, classified in class 365, subclass 189.01.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are not capable of use together and have different functions.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, their different required search and their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Paul Pysher on 22 October 2002 a provisional election was made with traverse to prosecute the invention of I, claims 1-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 21-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the

currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

The drawings filed 07 May 2002 are disapproved because there is no support in the original specification for two multifunctional pumps being connected in cascade. As seen in original Fig. 1, there is a series connection of multifunctional pump and regulator switch. Also, the submission filed 07 May 2002 fails to include formal copies of each figure.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 11-13 and 15-20 are rejected under 35 U.S.C. § 112, first paragraph, as based on a disclosure which is not enabling. Comparator 40 is deemed critical or essential to the practice of the invention, but is not included in the claim(s). An arrangement lacking this feature is not enabled by the disclosure since it cannot be understood from the specification how the circuit will operate without such. *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the

art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification fails to disclose how to make and use the circuit of Fig. 2. The specification discloses that the Fig. 2 includes a plurality of arrays. However, this is not at all understood because there is no such an element as an "array". As is notoriously well known in the art, the term array is merely used to describe the way elements are arranged. It is not seen that the term array can, in any way, attempt to impart what elements are used or desired to be used in the circuit. Since one skilled in the art would not know what elements are being used for the arrays, it is not seen that one skilled in the art can make and use the circuit of Fig. 2.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 5, 7-10, 12, 15 and 17-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, there is no support in the specification for the "square waveform". Nowhere is the specification seen to disclose that the circuits of Figs. 3 or 4 can provide a "square waveform" nor would it be understood what the purpose of such is.

In claim 5, it is not understood how apparatus recitation can further limit a method. Also, it is not understood what is meant by an "array". The term "array" is notoriously well known as a term that merely describes arrangement of elements, not the elements themselves. The term "array" would be synonymous with --set-- or --arrangement--. Without reciting what the circuit comprises an array of, it is not seen that one skilled in the art can understand the claim. Additionally, there is no support in the specification for the "arrays" being connected in parallel.

Clearly, the elements designated as “arrays” in Fig. 2 only have a common output, but not a common input and thus are not connected in parallel.

In claim 7, it is not understood how a “multifunctional pump” can have “standby mode” or a “read mode”. Clearly, there is no standby operation of read operation in a “pump”.

In claim 8, it is not understood how apparatus recitation can further limit a method. Also, it is not understood what is meant by “a read pump”. A “pump” does not have a “read” operation nor is there an element known in the art as a “read pump”.

In claim 9, it is not understood how apparatus recitation can further limit a method. Also, it is not understood what is meant by “a standby pump”. A “pump” does not have a “standby” operation nor is there an element known in the art as a “standby pump”.

In claim 10, it is not understood how apparatus recitation can further limit a method. Also, it is not understood what is meant by “a program/erase pump”. A “pump” does not have a “program/erase” operation nor is there an element known in the art as a “program/erase pump”.

In claim 11, it is not understood how the circuit can operate without the above discussed “critical feature”. In lines 4 and 8, there is no control recited for the “first switch” and “second switch”, thus it is not understood how such can operated. In lines 6-7, there are insufficient connections recited for the “transistor”. It is notoriously well known that connections are required for all three terminals of a transistor for such to operate. In line 8, it is not understood how the circuit can provide “a second output signal”, when it does receive anything.

Claims 12, 15 and 17-20 are rejected for similar reasons as claims 2, 5 and 7-20, respectively.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6-13 and 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Roohparvar (USPN 6,339,547).

With respect to claims 11-13 and 16-20, Roohparvar discloses a circuit, in Figs. 3 and 4, a circuit comprising: “a multifunctional pump (310)”; “a first switch (340)”; “a second switch (330)”; “a transistor (in Fig. 4)”, all connected and operating similarly as recited by Applicant.

With respect to claims 1-3 and 6-10 are, clearly the above circuit to Roohparvar will provide the recited method.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roohparvar (USPN 6,339,547) in view of Morishita (USPN 6,246,280).

With respect to claims 11-20, the above discussed circuit to Roohparvar fails to disclose any details for the “voltage regulator” 320. However, it is notoriously well known in the art, such as taught in Fig. 9 by Morishita, to use a negative feedback amplifier with transistor control to provide voltage regulation. Such a configuration is notoriously well known to provide high regulation with low temperature dependence. Therefore, it would have been obvious for one

skilled in the art to use a specific regulator such as taught by Morishita for the broad regulator 320 of Roohparvar for the expected results of high regulation with low temperature dependence. As seen this combination will include a "comparator" 510 connected to a "transistor" 520.

Further, it is notoriously well known in the art to make a "charge pump" utilizing an array of diodes, an array of transistors or an array of pump stages. Such arrangements are known to provide stable and substantial voltage boost. Therefore, it would have been obvious for one skilled in the art to use an array of diodes, an array of transistors or an array of pump stages for the expect advantage of providing stable and substantial voltage boost.

With respect to claims 1-10, clearly the above combination of Roohparvar in view of Morishita will provide the recited method.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terry Cunningham whose telephone number is 703-308-4872. The examiner can normally be reached on Monday-Thursday from 7:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 703-308-4876. The fax phone numbers for Technology Center 2800 are 703-872-9318 for Before Final communications and 703-872-9319 for After Final communications. Please note, any faxed paper clearly stating **DRAFT** or **PROPOSED AMENDMENT** at the top will be forwarded directly to the Examiner. All others will be treated as a formal response and acted upon accordingly.


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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is 703-308-0956.

TC
October 23, 2002


Terry D. Cunningham
Primary Examiner
Art Unit 2816